

Checking Out In A Strange Plane

You can save money, learn faster by 'ground schooling' yourself in procedures you'll need to know before soloing in different type aircraft

There comes a time in every pilot's life when he wants to learn to fly a different airplane from the type with which he is familiar. For some this opportunity comes often; for others it is much less often than desired. One of the more obvious reasons why some pilots are reluctant to learn a new airplane is the cost involved, which can vary from \$10 to \$30 per hour for the more popular single-engine lightplanes, including the instructor. Larger airplanes of course cost more. At that rate of expenditure it would cost quite a bit to learn all the details of an unfamiliar aircraft.

Fortunately, if an intelligent approach to the problem is carried out, this cost can be kept to an absolute minimum while a maximum can be learned with far more personal satisfaction.

First of all, what do the Civil Air Regulations have to say on the subject? Some years ago they required that in order to carry passengers, a pilot must have made at least five takeoffs and landings within the previous 90 days in an airplane with a horsepower rating within 50% of that of the airplane he planned to use for passenger carrying. This rule was superseded by the one presently in effect (Part 43.68), which states that no pilot may carry passengers unless within the previous 90 days he has made at least five takeoffs and landings to a full stop in an aircraft of the same category, class and type as the aircraft to be flown.

The first two descriptions are much more obvious than the third. *Category* differences involve the major designs, such as the glider, rotorcraft, the airplane, and the lighter-than-air machines. *Class* differences involve the operational design within a category, such as seaplanes and landplanes, multi-engine and single-engine, or unconventional design. *Type* differences within a class involve flight and handling characteristics such as the following:

1. Wing loading—gross weight per square foot of wing area
2. Power loading—maximum horsepower per gross weight
3. Landing gear—conventional vs. tricycle vs. inverted tricycle
4. Control system—three control vs.

- two control; stick control
5. Propeller control—fixed pitch vs. variable pitch vs. constant speed
6. Flap controls—power operated vs. manually operated vs. none
7. Stall characteristics—amount of pre-stall warning, fall-off rate, etc.

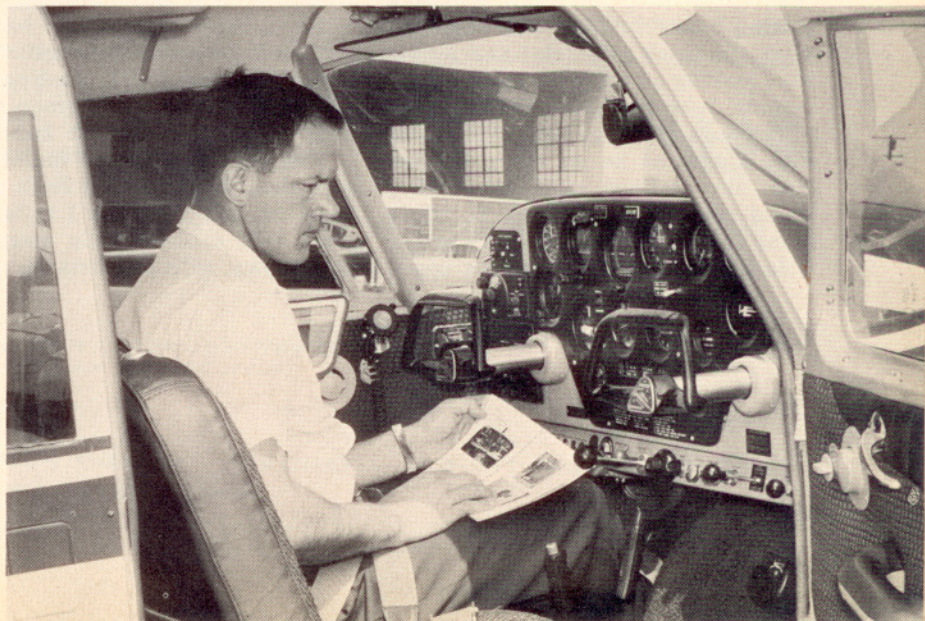
A certain amount of personal judgment is involved in deciding the degree of type differences between lightplanes (below 12,500 pounds gross weight). Type differences between heavy planes (about 12,500 pounds) are explicitly defined. Although the CAR do not require a checkout pilot or instructor, it would be quite unwise and in most instances downright dangerous for individuals to check themselves out in flight in an unfamiliar airplane.

The Civil Air Regulations (Part 60.11) also require that the pilot familiarize himself with all available information appropriate to the flight, which requires knowing quite a bit about the airplane itself. Before those five takeoffs are attempted there is a certain amount of groundwork which must be covered by any person who considers himself a safe pilot. This groundwork costs the pilot nothing except a bit of time and effort; and the time spent on the ground will materially reduce checkout time required in the air. If this groundwork were faithfully followed by all, insurance companies would not feel the need to require from five to 10 hours of checkout

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by PETER E. BORON • AOPA 63674

A necessary part of the familiarization with a different airplane is to sit in the airplane with a manual to learn the function of each control, as illustrated in this Piper Comanche



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flight time in the higher performance aircraft.

Read thoroughly the operation limitations and airplane manual. Specific items to be noted include gross allowable weight, useful load, CG limits, operational category (normal, utility, aerobatic), METO power, never exceed limits, power and airspeed settings for climb, cruise and landing, maximum gear and flap-lowering speeds, oil type and quantity, tire air pressures.

Learn the fuel system. It is mandatory to know the usable quantity of fuel in each tank including auxiliary or reserve tanks, the rate of fuel consumption at normal cruise and economy cruise power settings, fuel feed system, tank switching and shut-off valve, operation of the wobble pump, electric fuel pump, fuel gauges, drain valves, mixture-leaning procedure, minimum usable octane rating.

Learn the electrical system. Know the location and operation of circuit breakers, fuses, spare fuses, master switch, switches for navigation lights, panel lights, rotating beacon, landing lights, radio equipment, generator, battery.

Learn the emergency gear extension system. A manual system is required on power-operated systems and should be well understood before an emergency requires its use. There are often restrictions on the gear raising if it has been lowered manually. Also learn the gear warning system, which may be a horn, waving flag, control shaker, or a flashing light.

Learn the radio equipment. There are many types of communication and navigation equipment available today with similarities and differences which should be learned. When a pilot steps up to a higher performance plane he usually steps up also to more and better radio equipment. Common sense dictates that a thorough understanding of all the equipment be obtained on the ground prior to an in-flight demonstration.

Learn the purpose and proper use of every control, knob, button, light, switch, gauge, meter, etc. Learn the heating and ventilation system, gyro-control valves, oxygen equipment, etc. If the function of any item is unknown, its importance is unknown.

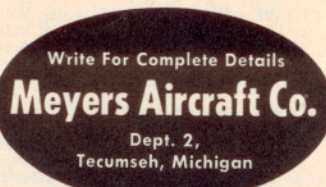
Learn the check lists. Every aircraft should have a takeoff check list and a landing check list. The larger the aircraft, the longer the list. This need not be memorized but should be noted item by item at the proper time. An abbreviated check list should be memorized for emergency situations, however. In addition to the flight check lists there is the ground line check list, which normally varies between airplanes in the details, though it is similar in format.

The foregoing familiarization does not cost a penny. If there is any item not fully understood by the pilot he should question the checkout instructor prior to flight. It should be remembered

THE AUTHOR

When it comes to the finer measures of checking out safely in an unfamiliar aircraft, Peter E. Boron can speak with authority. A 33-year-old commercial pilot, he has logged some 2,000 hours since 1947 and is currently employed in flight and ground instruction in the Los Angeles area.

also that panic is the normal result of not knowing what to do when a critical situation arises. When a person has properly learned the courses of action to take, he is well prepared for any emergency condition.



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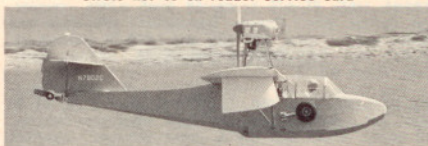


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Purpose of these seven points is to enable you to become familiar with the airplane and its auxiliary equipment before any flight is attempted.

Learn the flight characteristics. Last but not least, learn how the airplane reacts on takeoff, in slow flight, in different types of stalls, in steep turns, when trimmed for cruise, on instruments, on autopilot, etc. Now you are ready to practice those takeoffs and landings. And be sure to include short field exercises, wheel landings and a full stall landing. The opinion of the checkout instructor should be respected. If additional practice is advised for any phase, it should be accomplished. END

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